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New soluble- formazan assay for HIV-1 cytopathic effects: application to high-flux screening of synthetic and natural products for AIDS-antiviral activity.

Weislow OS ; Kiser R; Fine DL; Bader J; Shoemaker RH; Boyd MR
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We have developed an effective and optimally safe microculture method for rapid and convenient assay of the in vitro cytopathic effects of human immunodeficiency virus (HIV-1) on human lymphoblastoid or other suitable host cells. The assay procedure is applicable to the evaluation of drug effects on in vitro infections induced directly in cultured host cells by cell-free HIV-1 or by coculture with H9 cells chronically infected with HIV-1. The assay uses a newly developed tetrazolium reagent that is metabolically reduced by viable cells to yield a soluble, colored **formazan** product measurable by conventional colorimetric techniques. This simple microassay minimizes the number of plate manipulations typically required with other assay methods and, coupled with computerized data collection and analysis, facilitates large-scale screening of agents for potential antiviral activity. To support and enhance the discovery of new anti-HIV-1 agents, the National Cancer Institute is offering investigators worldwide the opportunity to submit new candidate agents for anti-HIV-1 screening with this method.

Tags: Human; Support, U.S. Gov't, P.H.S.

Descriptors: *Antiviral Agents--pharmacology--PD; *Cytopathogenic Effect, Viral--drug effects--DE; *HIV-1--drug effects--DE; *Tetrazolium Salts --diagnostic use--DU; Cell Line; Drug Evaluation, Preclinical--methods--MT; Formazans--metabolism--ME; HIV Antigens--biosynthesis--BI; HIV Core Protein p24; Indicators and Reagents; Retroviridae Proteins--biosynthesis--BI

CAS Registry No.: 0 (Antiviral Agents); 0 (Formazans); 0 (HIV Antigens); 0 (HIV Core Protein p24); 0 (Indicators and Reagents); 0 (Retroviridae Proteins); 0 (Tetrazolium Salts); 117038-70-7 (2,3-bis(2-methoxy-4-nitro-5-sulfophenyl)-5-((phenylamino)carbonyl)-2H-tetrazolium hydroxide); 70709-62-5 (1,5-bis(2-methoxy-4-nitro-5-sulfophenyl)-3-((phenylamino)carbonyl)formazan)

Record Date Created: 19890512

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	L #	Hits	Search Text	DBs	Time Stamp
1	L1	675	514/16.ccls.	USPA T; US-P GPUB	2002/01/03 13:03
2	L2	409	lipopeptide or pumilacidin or surfactin	USPA T; US-P GPUB	2002/01/03 13:03
3	L3	8	1 and 2	USPA T; US-P GPUB	2002/01/03 13:03

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Set	Items	Description
S1	488	CYCLIC(W)LIPOPEPTIDE? ?
S2	19	PUMILACIDIN? ?
S3	1829	SURFACTIN? ?
S4	2219	S1 OR S2 OR S3
S5	35150	(VIRUS OR VIRAL) (2N) (INACTIVAT? OR KILLED OR KILLING OR KI-LL)
S6	69202	(VIRUS OR VIRAL) (2N) INHIBIT?
S7	101634	S5 OR S6
S8	38	S4 AND S7
S9	2	S8 NOT PY>1996
S10	2	RD (unique items)
S11	2788972	VIRUS OR VIRAL
S12	1032701	VIRUSES
S13	3031881	S11 OR S12
S14	136	S4 AND S13
S15	7514	LIPOPEPTIDE? ?
S16	218988	15 AND S13
S17	1231	S15 AND S13
S18	39	S14 NOT PY>1996
S19	28	RD (unique items)
S20	141	S17 AND S7
S21	22	S20 NOT PY>1996
S22	22	RD (unique items)
S23	50	S19 OR S22
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